

ABSTRACT OF THE DISCLOSURE

A method for manufacturing calcium fluoride single crystal includes the step of cooling the calcium fluoride single crystal so that maximum shear stress inside the calcium fluoride single crystal caused by thermal stress is approximately equal to or smaller than critical resolved shear stress (τ_c) in a $\langle 1\ 1\ 0 \rangle$ direction of on a $\{0\ 0\ 1\}$ plane of the calcium fluoride single crystal.